



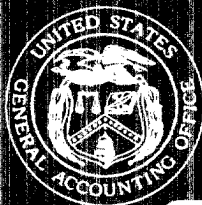
United States General Accounting Office

Report to Congressional Committees

June 1998

# B-2 BOMBER

## Additional Costs to Correct Deficiencies and Make Improvements



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June 16, 1998

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Congressional Committees

The conference report on the National Defense Authorization Act for Fiscal Year 1994 requires us to report to the congressional defense committees at regular intervals on the total acquisition costs of the B-2A bomber through the completion of the production program. The last production aircraft was delivered in November 1997, and all aircraft are scheduled to be updated to the latest defined (block 30) configuration by July 2000.<sup>1</sup> This report discusses deficiencies that must be corrected to achieve Air Force objectives for the B-2A, additional costs to correct the deficiencies, and the B-2A modification schedule.<sup>2</sup>

## Background

The Air Force began development of the B-2A in 1981 and reported on June 30, 1997, after 16 years, that the development and the initial operational test and evaluation had been completed. The Air Force reports of the initial operational tests were completed in November 1997.

In 1986, the Air Force estimated that B-2A development could be completed for \$14.5 billion, including a 4-year, 3,600-hour flight test program scheduled at that time to end in 1993. The flight test program ended June 30, 1997, and the estimated cost of the development program had grown to over \$24 billion and the flight test program to about 5,000 flight test hours over 8 years. The development and testing programs were extended because of Air Force changes in the B-2 requirements and various technical problems.

Major changes and problems contributing to the delays included (1) making the B-2A's primary mission conventional rather than nuclear; (2) redesigning the aircraft to satisfy an added requirement to penetrate adversary air space at low altitudes; (3) difficulty in manufacturing test aircraft, resulting in late delivery of partially complete test aircraft; (4) difficulties achieving acceptable radar cross-section readings on test aircraft, which resulted in significant redesigning and retesting of certain components; and (5) correction of deficiencies in the aft deck structure because of the unanticipated effects of engine exhaust.

<sup>1</sup>The B-2A's final configuration is defined as a block 30 aircraft. The Air Force accepted B-2s in two other configurations, a block 10 training aircraft and block 20 interim capability aircraft, which all will be upgraded to the block 30 configuration.

<sup>2</sup>A list of related GAO reports is included at the end of this report.

Even though numerous problems hindered the scheduled completion of B-2A development, production began with no flight testing having been completed. This resulted in substantial overlap of development and production. Test and production aircraft were delivered that did not fully meet the Air Force requirements, and a 5-year post-delivery modification program was initiated to update all aircraft to the block 30 configuration. Since production began in 1986, the planned number of B-2As was reduced from 133 to 21 aircraft and both the total development and the average unit procurement costs increased. Table 1 shows the change in estimated total and unit cost from 1986 to 1998.

**Table 1: Comparison of B-2A Program Total and Unit Costs Between 1986 and 1998**

Millions of then-year dollars				
Acquisition element	1986 (133 aircraft)		1998 (21 aircraft)	
	Total cost	Unit cost	Total cost	Unit cost
Development	\$14,500		\$24,700	
Procurement	\$43,700	\$329	\$19,600	\$933
<b>Total</b>	<b>\$58,200</b>	<b>\$438</b>	<b>\$44,300</b>	<b>\$2,110</b>

The last two of the 21 B-2As were delivered to the Air Force in the block 30 configuration. The major effort remaining in the B-2A acquisition program is modification of the other 19 B-2As to the block 30 configuration, scheduled for completion in July 2000. Through April 1998, six B-2As have been delivered in, or modified to, the block 30 configuration and were operational at Whiteman Air Force Base, Missouri. Ultimately, the Air Force plans to have 21 B-2As, of which 16 will be available for missions (2 squadrons of 8 aircraft), and 5 will be in various maintenance and repair cycles.

## Results in Brief

The Air Force evaluated the B-2A capability to meet several broad objectives—strike rapidly, sustain operations, deploy to forward locations, survive in hostile environments, and deliver weapons accurately. The November 1997 operational test reports concluded that B-2As, in the block 30 configuration, are operationally effective, but with several important deficiencies that limit the aircraft's ability to fully meet those objectives as planned.

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The test reports identify four deficiencies:

- Incomplete development of the automated ground mission planning system, which is needed to rapidly plan and carry out B-2A strike missions.
- Unsatisfactory performance of the defensive avionics system, which is used to provide enemy threat information to the crews and increase their survivability in certain situations.
- Inadequate reliability and maintainability of low observable materials and structures, reducing the ability to sustain the defined pace of operations while maintaining a high degree of survivability for conventional B-2A missions.
- Lack of environmental shelters to maintain low observable materials and to protect the aircraft from certain weather conditions during deployment.

The fiscal year 1999 B-2A cost estimate identifies the cost to complete the B-2A program for the block 30 configuration at \$44.3 billion then-year dollars. Included in this figure is funding to correct or improve some, but not all, of the deficiencies listed above. For example, the estimate does not include the additional costs that would be incurred if defensive avionics were to be required to achieve the originally planned capability, which Department of Defense (DOD) officials said is no longer required at this time. However, it does include funding for software upgrades to improve the system performance, which meets current operational objectives. Further, it does not include the cost to improve low observable materials, which are needed to sustain the pace of B-2A operations, and to provide for a sufficient number of deployment shelters to accommodate repairs to B-2As. The estimate also excludes costs to buy spare parts that are being identified to support the B-2A's nuclear mission.

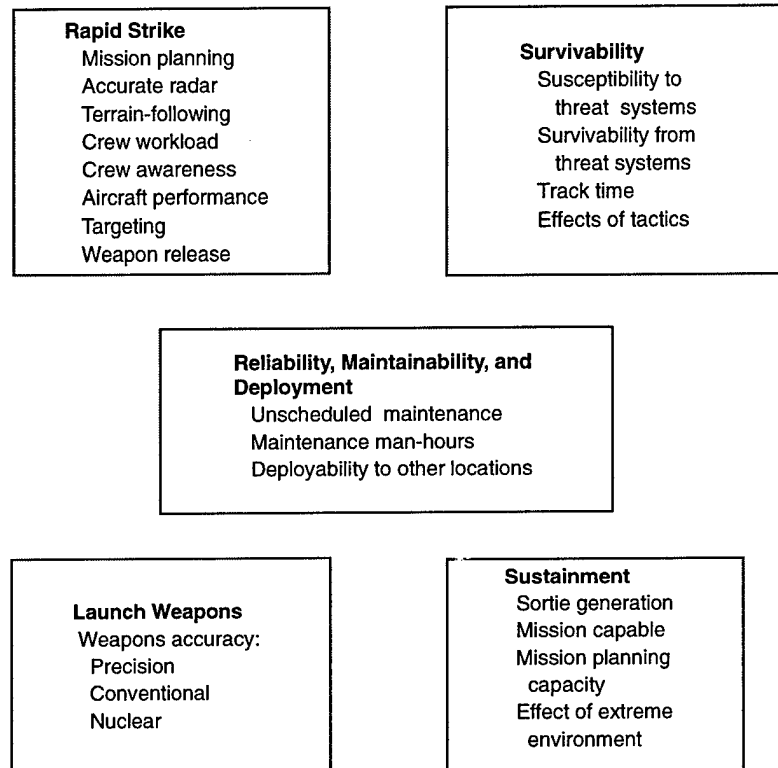
Modifications of B-2As to the block 30 configuration have not been accomplished on schedule. Four modified aircraft were delivered as of April 1998—three later than scheduled and one ahead of schedule. According to the Air Force, the contractor has had difficulty hiring enough personnel to achieve the schedule.

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## Deficiencies Must Be Corrected to Achieve Air Force Objectives

To test the operational performance of the B-2A, the Air Force measured B-2A performance against five broad operational objectives that were derived from documented Air Force operational requirements and concepts related to nuclear and conventional missions. Figure 1 identifies these operational objectives and the key elements of each that were included in the operational testing.

**Figure 1: Key Elements of the Broad Operational Objectives Included in Operational Tests**



Although test results indicate that B-2As generally met operational objectives, four deficiencies were identified during testing that will limit or, under some circumstances, change the planned concepts for using the B-2As and slow its operational pace. These relate to mission planning, defensive avionics, low observable materials, and deployment.

As the B-2A matures, numerous minor problems identified in the test reports are scheduled to be corrected or improved based on their relative priorities. These include corrections of minor software and hardware deficiencies, improvements to make crew operations easier or faster, improvements of selected radar modes, and relocation of certain buttons or displays. The corrections and improvements involve flight operation as well as maintenance and support of the aircraft.

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## Mission Planning System Still in Development

Ground mission planning, which is still in development, is important to the successful employment of the B-2A because very precise mission routes must be planned to maximize the benefits of the aircraft's low observable features. Mission planning for the B-2A, done with the automated Air Force Mission Support System (AFMSS), currently takes more time than planned. This will limit the Air Force's ability to rapidly strike targets and sustain operations.

The goal of the AFMSS development program is to produce a mission planning system that can provide specific B-2A mission plans in 8 hours. Testing as of June 30, 1997, concluded that the system frequently malfunctioned, was not flexible or user friendly, and was complex and time consuming to use. Air Force operators at Whiteman Air Force Base told us that the developmental version of AFMSS had so many failures that they estimated it would take 60 hours to plan a conventional mission and 192 hours to plan a nuclear mission.

AFMSS is an acquisition program separate from the B-2A and is being developed to support all Air Force combat aircraft. Interface of AFMSS with the B-2A began in 1994. According to the operational test report, AFMSS is a complex system made up of separate subsystems developed by different contractors. The Air Force has received various developmental versions of AFMSS subsystems, and additional upgrades to software and hardware are planned in fiscal years 1998 and 1999. The Air Force expects these upgrades to support preparation of mission plans in 8 hours by the third quarter of fiscal year 1999.

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## Defensive Avionics Do Not Work as Planned

The Air Force spent over \$740 million to develop the defensive system for the B-2A; however, test reports concluded that this system is unsatisfactory. The lack of an effective defensive avionics system could affect the B-2A's survivability in selected situations because it is supposed to provide B-2A crews with information on the location of threats, both known and unknown that they may encounter during a mission. Limited funds and time are available to correct all the deficiencies in the defensive system. The Air Force plans some software upgrades that are intended to provide the defensive system with a limited but useful capability.

Air Force officials said the cost of making the defensive system meet originally planned capability is unaffordable at this time. Air Force officials told us that all the functions originally planned for the system are not required to successfully carry out the planned B-2A missions. The

operational test report further stated that, although the defensive system is rated unsatisfactory, the system's deficiencies do not prevent planning and executing B-2A missions. The test report indicated that the B-2A's low observability to adversary threat systems permits use of other effective tactics that could ensure its effective employment.

The defensive system is supposed to provide the crew information on enemy threat systems to enhance B-2A survivability. Known threat locations are included in computer files prior to the mission. The system is to correlate these with the actual threats as the B-2A flies its mission, but it is also to identify and locate unknown threats that pop-up during a mission. However, this system does not work as planned, limiting the utility of information provided the crew during critical portions of expected B-2 missions. For example, test reports indicate that the defensive system provided inaccurate or cluttered information to the crew and had unacceptably high workloads for the operators.

The number and significance of problems with the defensive system were not identified until near the end of the flight test program, leaving Air Force program managers little time to correct problems. Flight testing, where most of the problems were discovered, did not begin for the defensive system until February 1993, almost 4 years after the flight test program started in July 1989 and almost 2 years after other avionics began flight testing in June 1991. According to Air Force officials and an independent review team, several issues contributed to the deficiencies and their discovery late in the developmental and test processes. These reasons included (1) development and testing began late, (2) successful early laboratory tests could not be repeated in flight tests, (3) test results from flight tests were not completely analyzed before tests were continued, (4) the contract provided incentives to move ahead with development rather than correct problems, (5) there was too much confidence that upgrades to computer software would solve the problems, and (6) there were inadequate engineering controls to prevent the overoptimistic view and approach to this development effort.

The Air Force's cost estimate does not include the cost of correcting all deficiencies but does cover some improvements in the defensive system. The Air Force plans to develop software changes that are scheduled to be available for use by 2000, if tests demonstrate the changes are effective in providing a useful capability. Air Force officials indicated some changes have been tested by operational crews with good success. These software changes are intended to provide capabilities that are useful but less than

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were expected in the original defensive system design. The Air Force believes these changes will meet their requirements. To achieve the original design would require more costly upgrades, including new computer processors. Expensive hardware upgrades are not included in current Air Force plans to enhance the B-2A.

Historically, defensive avionics have experienced significant problems during development. The B-1B bomber had serious deficiencies with its defensive avionics and the Air Force is still working to provide an effective defensive capability for the B-1B. Other defensive avionics programs, like the Air Force's ALQ-135 jammer and the Navy's Airborne Self-Protection Jammer, also experienced costly development problems.

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### Inadequate Reliability and Maintainability of Low Observable Materials

Low observable materials and features on the B-2A frequently fail, requiring high amounts of maintenance. They also have time-consuming and environmentally controlled repair processes and long cure times for the materials repaired. This reduces the time aircraft are available for operational use, which keeps mission capable rates below the Air Force requirement. These problems increase the amount of time it takes to prepare a B-2A for its next combat flight, potentially reducing the number of sorties that could be flown in a given period of time.

During operational testing, low observable materials and features accounted for 40 percent of unscheduled maintenance and 31 percent of the maintenance hours to repair the aircraft. Aircraft operating at Whiteman Air Force Base experienced results similar to those in the operational test. During a visit to Whiteman Air Force Base, we observed a block 20 B-2A aircraft after a 10-hour flight. The aircraft had damaged tape, caulk, paint, and heat tiles, all low observable materials. In addition, we observed hydraulic fluid leaks beneath the aircraft that further damaged tape and caulk. The Air Force is incorporating some new low observable tape materials into the block 30 aircraft, which should reduce some maintenance; however, according to Air Force officials, this improvement will not be adequate to achieve the operational pace currently planned for the aircraft.

In addition to the frequent failure of these materials, the processes to repair them are time consuming and require an environmentally controlled repair facility. Cure times on some of the low observable tapes and caulks, items that most frequently fail, can be as long as 72 hours, but most materials require 24 or more hours.

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The poor durability and extensive maintenance required of low observable materials is an important factor keeping the B-2As from achieving desired mission capable rates—the Air Force measure of an aircraft fleet's availability to perform its assigned missions. At maturity, the Air Force goal for a mission capable rate is 77 percent. On average, the mission capable rate in calendar year 1997, when including the effects of low observable features, was 36 percent, less than half the goal.

The Air Force has prepared a comprehensive plan to develop, test, and install new and improved low observable materials, and to improve repair processes, reduce cure times, and develop new diagnostic tools that should allow the B-2A to meet operational requirements. The plan extends through 2005 and shows that funds required for research and development, procurement, and operations and maintenance could total about \$190 million, of which \$144 million is not in the current cost estimate.

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### Lack of Environmental Shelters for Deployment

The operational test report states that the block 30 B-2A aircraft must be sheltered to protect it from weather and provide a suitable environment in which to maintain low observables. The Air Force is studying options for providing shelters, including the purchase of portable shelters and use of existing facilities.

The Air Force plans to buy a portable deployment shelter as a test article to determine if the portable shelters will be adequate to protect and maintain the B-2A's low observable features. If the Air Force buys the shelters, at a minimum it will require 17—1 training shelter and 1 operational shelter for each of the 16 primary mission aircraft.

Air Force officials stated they are dedicated to buying the deployment shelters but have not determined how many shelters are needed to support B-2A deployments or the shelter configuration. In addition, they said funding sources have not been identified, but the shelters will likely cost a total of between \$15 and \$25 million, depending upon the quantity purchased.

Air Force officials said they have begun to practice deploying the B-2A and it is likely additional requirements will be identified when this happens. The Air Force completed one exercise, deploying two B-2As to Guam, in March 1998, and plans two more in 1998. Air Force officials advised us that

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the B-2As performed well in the March 1998 deployment, but an official report has not been issued on the results as of April 1998.

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## Additional Funds Will Be Required to Complete the Program

The fiscal year 1999 B-2A cost estimate indicates it will cost \$44.3 billion then-year dollars to complete development, procurement, and modification. However, the Air Force will incur additional costs if it plans to correct the deficiencies identified during testing and achieve the full operational capability originally planned for the B-2A. At this time, there is no comprehensive plan that identifies the efforts required to achieve the full B-2A capability, the likely cost of these efforts, or a funding plan. Further, the Air Force has not yet determined all requirements needed to achieve some capabilities.

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## Most B-2A Funds Have Been Appropriated

The fiscal year 1999 B-2A cost estimate indicates the cost to complete development, procurement, and modification of the B-2A program is \$44.3 billion then-year dollars. Through fiscal year 1998, the Air Force has been appropriated \$43.3 billion, or 98 percent.

Air Force estimates show the funding required from fiscal years 1999 to 2003 to complete development is \$446.7 million and to complete procurement and modifications from fiscal years 1999 to 2005 is \$599.4 million. Table 2 shows the major elements of costs for which funding is to be requested in fiscal years 1999 and beyond.

**Table 2: Planned Use of Funds for the B-2A Program from Fiscal Years 1999 Through 2005**

Then-year dollars in millions	
<b>Development</b>	
Northrop Grumman	\$332.9
Armament	0.2
Mission planning	23.9
Government test	65.3
Other government test	5.9
Direct release	18.5
<b>Total development</b>	<b>\$446.7</b>
<b>Procurement</b>	
Air vehicle	\$91.4
Equipment/data/training	34.5
Interim contractor support	103.1
Spares	119.6
Retrofit	92.6
Program management	30.0
Other government costs	32.0
Software support	96.2
<b>Total procurement</b>	<b>\$599.4</b>
<b>Total estimated cost</b>	<b>\$1,046.1</b>

### Additional Costs Will Be Required

As discussed above, testing identified four deficiencies that will require additional costs if the Air Force plans to fully correct all deficiencies. In addition to the cost increases needed for defensive avionics, low observable materials, and support needed for deployment, the Air Force will also incur costs to procure spares to support the nuclear mission of the B-2A. Table 3 shows estimated costs to fix deficiencies that are not in the current cost estimate as well as areas of other potential cost increases not yet fully defined by the Air Force.

**Table 3: Estimated Cost to Correct Deficiencies and Improve B-2A Capabilities**

Deficiency	Estimated costs not in estimate	Comments
Defensive avionics	\$0 <sup>a</sup>	New computer processors needed to provide full capability would be costly but are currently not planned for acquisition.
Low observable features	\$144 million	The Air Force said it plans to use \$54 million of the fiscal year 1998 funds added by Congress to help fund some of the \$144 million in improvements planned for low observable materials.
Deployment and shelters	\$15 to \$25 million	The Air Force is now beginning to practice B-2A deployments to identify support equipment shortfalls, which could result in additional costs.
Spares	Not yet determined by Air Force	The Air Force must still identify and acquire spare parts to support the nuclear mission. Costs estimates and funding plans are not expected to be available until June 1998 or later.

<sup>a</sup>\$34 million is included in the cost estimate to provide a limited capability. No additional costs are planned.

## Block 30 Modification Schedule Issues

The Air Force program to upgrade 19 B-2A aircraft to the block 30 configuration is falling behind schedule and further delays are possible. In addition, modified aircraft have been delivered with significant numbers of deficiencies.

Air Force officials said Northrop Grumman has not been able to hire adequate numbers of workers; therefore, modifications have been delayed. Both the Air Force and Northrop Grumman were trying to complete modifications based on schedules that were 3 to 6 months ahead of the contract schedule. Because of delays and problems, these accelerated schedules have been discarded. As of April 1998, Northrop Grumman had delivered three modified aircraft later than, and one modified aircraft earlier than, the contract schedule. The Air Force is assessing schedule

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performance and studying the funding implications of a schedule slip. At this time, the Air Force believes adequate funds are available to complete the modifications.

The Air Force is also assessing a planned schedule change that could significantly delay the modification program for one aircraft. This change would be to accommodate the need to provide an aircraft for flight testing planned upgrades. Until the assessment is complete, Air Force officials said it is not possible to determine if there will be a cost impact on the modification program.

All four block 30 aircraft delivered from the modification line have a significant number of deficiencies. Air Force officials stated that some of these deficiencies are not operationally critical and will be corrected during regular scheduled maintenance activities. They said a team will be located at Whiteman Air Force Base, Missouri, to correct some of the deficiencies, and others will be corrected during normal aircraft maintenance cycles to maintain the aircraft in active operational service. The four aircraft have from 30 to 46 deficiencies each and, to ensure corrections are made, the Air Force has withheld contractor payments totaling \$24.5 million for two of the delivered aircraft.

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## Conclusions and Recommendations

DOD should determine the nature and cost of those efforts that remain to be accomplished to bring the B-2A into compliance with operational requirements established by the Air Force. This report identifies various deficiencies that are unresolved and indicates the Air Force is still identifying other requirements that may require further effort and funding. We recommend that the Secretary of Defense direct the Secretary of the Air Force to identify remaining efforts to achieve full operational capability, the costs to complete these efforts, and the fiscal year funding requirements not currently in the fiscal year 1999 President's Budget for the B-2A program. We further recommend that this information be provided to Congress with the fiscal year 2000 President's Budget in the form of a comprehensive plan to complete the B-2A program.

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## Agency Comments

In commenting on a draft of this report, DOD partially concurred with the recommendations. DOD stated the B-2A is projected to meet full operational capability by the third quarter of fiscal year 1999 as a "baseline program" within currently programmed funding. DOD, therefore, states no additional reporting is required on baseline requirements. DOD defines the

baseline program as being a block 30 aircraft. The DOD position assumes all operational problems discussed in this report will be resolved without additional cost, but, until these deficiencies have been proven to be corrected, some cost uncertainty remains. In addition, as this report points out, the Air Force has accepted the block 30 aircraft with less performance in some areas than originally planned in the baseline program.

DOD agreed there is a need to identify to Congress future efforts and funding requirements to upgrade current B-2As. DOD said it is developing a long-range plan for upgrades to the bomber force and that funding requirements will be included in the normal budgeting process. This action is consistent with our recommendations. DOD's comments are presented in their entirety in appendix I. DOD provided additional technical comments, which have been incorporated in this report, as appropriate.

## Scope and Methodology

To identify deficiencies with the operational performance of the B-2A, we reviewed key test reports and summaries prepared by the B-2A Combined Test Force, which conducted the developmental test and evaluations, and the Air Force Operational Test and Evaluation Command, which conducted the initial operational test and evaluations. We also reviewed assessments of the B-2A operational testing prepared by the Office of the Secretary of Defense, Operational Test and Evaluation, and we reviewed various program management and engineering reports that summarized performance and testing efforts being conducted on the B-2A program. We interviewed Air Force engineers, test managers, and program management officials to determine the nature and extent of problems that were identified. We also discussed deficiencies identified during testing and current operational experience and performance of operational B-2As with Air Force officials at Whiteman Air Force Base, Missouri.

To identify cost issues and plans to correct deficiencies, we reviewed the available planning documents that identified corrective plans and funding requirements for selected deficiencies. We reviewed the B-2A's program office annual cost and budgetary estimates, financial and management reports, contract cost reports, program schedules and plans, and other documents. We also interviewed Air Force officials in the B-2A program and at Air Combat Command to determine cost and funding plans to correct deficiencies and complete efforts necessary to provide fully operational B-2A aircraft.

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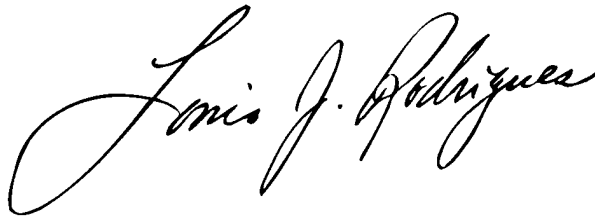
To identify the status of the block 30 modification schedule, we reviewed the contract and planning schedules for the block 30 modification process, delivery documents identifying the delivery date and number of deficiencies on the delivered aircraft, and reports showing planned and actual manning at the contractor's modification facility. We also discussed with Air Force managers of the modification process, the reasons for delayed deliveries, changing schedules, and the plans to correct remaining deficiencies.

We performed our review from September 1997 to May 1998 in accordance with generally accepted government auditing standards.

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We are sending copies of this report to the Secretaries of Defense and the Air Force, the Director of Office of Management and Budget, and other interested parties. We will make copies available to others upon request.

Please contact me on (202) 512-4841 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix II.

A handwritten signature in cursive script, reading "Louis J. Rodrigues". The signature is written in black ink and is positioned above the printed name and title.

Louis J. Rodrigues  
Director, Defense Acquisitions Issues

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List of Congressional Committees

The Honorable Strom Thurmond  
Chairman

The Honorable Carl Levin  
Ranking Minority Member  
Committee on Armed Services  
United States Senate

The Honorable Ted Stevens  
Chairman

The Honorable Daniel K. Inouye  
Ranking Minority Member  
Subcommittee on Defense  
Committee on Appropriations  
United States Senate

The Honorable Floyd Spence  
Chairman

The Honorable Ike Skelton  
Ranking Minority Member  
Committee on National Security  
House of Representatives

The Honorable C. W. Bill Young  
Chairman

The Honorable John P. Murtha  
Ranking Minority Member  
Subcommittee on National Security  
Committee on Appropriations  
House of Representatives

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## Abbreviations

AFMSS	Air Force Mission Support System
DOD	Department of Defense



# Comments From the Department of Defense



ACQUISITION AND  
TECHNOLOGY

## OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

21 MAY 1998

Mr. Louis J. Rodrigues  
Director, Defense Acquisitions Issues  
National Security and International  
Affairs Division  
U. S. General Accounting Office  
Washington, DC 20548

Dear Mr. Rodrigues:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "B-2 Bomber: Additional Costs to Correct Deficiencies and Make Improvements," dated April 23, 1998 (GAO Code 707282/OSD Case 1595). The DoD partially concurs with the two recommendations contained in the report.

The DoD comments on the recommendations are provided in the enclosure. Suggested technical changes for clarification and accuracy have been provided separately.

The Department appreciates the opportunity to comment on the GAO draft report.

Sincerely,

A handwritten signature in cursive script, reading "George R. Schneider".

George R. Schneider  
Director  
Strategic and Tactical Systems

Enclosure



GAO DRAFT REPORT - DATED APRIL 23, 1998  
(GAO CODE 707282) OSD CASE 1595

"B-2 BOMBER: ADDITIONAL COSTS TO CORRECT DEFICIENCIES  
AND MAKE IMPROVEMENTS"

DOD COMMENTS ON THE GAO RECOMMENDATIONS

**RECOMMENDATION 1:** The GAO recommended that the Secretary of Defense direct the Secretary of the Air Force to identify remaining efforts to achieve full operational capability, the costs to complete those efforts, and the fiscal year 1999 President's Budget for the B-2 program. (p. 17/GAO Draft Report)

**DoD RESPONSE:** Partially Concur: The B-2 is projected to meet full operational capability by the third quarter fiscal year 1999 as a baseline program requirement and within currently programmed funding. No additional reporting is required to help meet these baseline requirements. In addition to baseline budget expenditures, a Congressional addition to the fiscal year 1998 B-2 budget is being applied toward low observable maintainability. DoD agrees there is a need to identify future efforts and funding requirements to continue upgrades to current B-2 systems. The Air Force is in the process of developing a long-range plan to program and budget for upgrades to the entire long-range bomber force. However, it should be understood that any upgrades identified in this plan will compete with other DoD requirements for future funding. If the DoD determines that additional improvements are required for the B-2, the Air Force will identify the scope of the specific program initiatives, the associated cost estimates, and the funding requirements as part of the normal budgeting process.

**RECOMMENDATION 2:** The GAO also recommended that the information (in Recommendation 1) be provided to the Congress with the fiscal year 2000 President's Budget in the form of a comprehensive plan to complete the B-2 program. (p. 17/GAO Draft Report)

**DoD RESPONSE:** Partially Concur: As stated above, the Air Force is in the process of developing a long-range plan to program and budget for requirements, upgrades, and improvements for the entire long-range bomber force, which includes the B-2. However, individual funding requirements identified in this plan will compete with other DoD requirements for future funding precedence. The fiscal year 2000 budget will describe the Department's bomber modernization program, including associated funding.

# Major Contributors to This Report

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National Security and  
International Affairs  
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D.C.

David E. Cooper  
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Michael J. Hazard  
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# Related GAO Products

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B-2 Bomber: Cost and Operational Issues (GAO/NSIAD-97-181, Aug. 14, 1997).

B-2 Bomber: Status of Efforts to Acquire 21 Operational Aircraft  
(GAO/NSIAD-97-11, Oct. 22, 1996).

B-2 Bomber: Status of Cost, Development, and Production (GAO/NSIAD-95-164,  
Aug. 4, 1995).

B-2 Bomber: Cost to Complete 20 Aircraft Is Uncertain (GAO/NSIAD-94-217,  
Sept. 8, 1994).